

## PROJECT INFORMATION FORM

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Grant Period:		
<b>Project Type</b>		
<input type="checkbox"/> <b>Schools</b>	<input type="checkbox"/> <b>Large Venue</b>	<input type="checkbox"/> <b>Multi-family Dwellings</b>
<input type="checkbox"/> <b>Businesses</b>	<input type="checkbox"/> <b>Bar &amp; Restaurant</b>	<input type="checkbox"/> <b>Fitness Facilities</b>
<input type="checkbox"/> <b>Entertainment/Hospitality Venue</b>	<input checked="" type="checkbox"/> <b>Other <u>Golf Course</u></b>	

## Project Description

### Project Summary

The City of Antioch implemented a beverage container and mixed paper recycling program throughout the Lone Tree 18-hole golf course, driving range and clubhouse. The city purchased: 1) 18 Par Aide beverage container recycling receptacles that were placed on each golf course ball washer, 2) 18 flat top Windsor Barrel beverage container recycling receptacles for use on the clubhouse grounds, driving range and patio area, and 3) 1 Slim Jim recycling receptacle for the clubhouse bar. Recycling bin location breakdown: Snack Bar area (3), cart check out/in (3), pro shop (1), putting range/picnic area (2), driving range (3), maintenance yard (1), cart barn (5). There is also a recycling bin on the concession cart (see photo).

### Project Location

Lone Tree Golf Course, Antioch, California

### Goal

The goal is achieve a 50% waste reduction at the Lone Tree Golf Course. The goal includes eliminating cardboard from the dumpsters entirely and keeping the recycling contaminant free.

### Baseline Data Study

#### Waste Characterizations

In order to gauge the project progress, data was collected throughout the grant period. There were five waste characterization studies conducted at Lone Tree Golf Course. The first study was the baseline study followed by two seasonal studies and two annual studies. Recycling carts were weighed monthly.

The five waste characterization studies were conducted by taking samples of the waste from each of the two dumpsters located onsite (maintenance yard and clubhouse). The studies

were conducted over a one-week period with samples taken the morning of each service day (Monday, Wednesday and Friday) in order to capture a full week of garbage generation.

The following material types were tracked: cardboard, newspaper, mixed paper, aluminum cans, plastic bottles, glass bottles and jars, other recyclables and garbage. Prior to recycling collection service being established at the site, recyclable material sorted in the study was recycled off-site to the maximum extent possible. Once recycling service was established, recyclable material from the studies were placed in carts for recycling. Garbage was placed back into the dumpsters for disposal.

### Recycling Cart Weighing

The recycling carts were serviced on a weekly basis. All of the recycling carts on site were weighed prior to collection by the hauler on the 4<sup>th</sup> Monday of the month. This data was tracked throughout the grant period.

### **Container Selection**

Selecting containers to use for this project was determined by existing conditions at the golf course and public venues in the city. Lone Tree Golf Course has ball washers with garbage cans at each hole. Par Aides, the manufacture of the ball washers, makes a recycling bin that can be attached to the existing apparatus. Since it is vital for objects on a golf course to be as unobtrusive as possible, this was the best selection for the course. Windsor Barrels were selected for other areas on the premises, to create a consistent look with other recycling programs throughout the city.

### **CRV Collection**

Lone Tree maintenance staff empties all of the recycling receptacles several times per day. There are recycling carts for collection by the city's franchised hauler for glass, plastic and metal next to the maintenance yard and clubhouse dumpsters. Next to the clubhouse garbage dumpster is a cardboard recycling dumpster and a mixed paper cart. Green waste carts are located next to the maintenance yard garbage dumpster. Materials collected are:

- ∞ Aluminum soda and juice cans
- ∞ All plastic containers #1 – 7
- ∞ Glass bottles and jars
- ∞ Bi-metal cans
- ∞ Any other beverage containers
- ∞ Mixed paper (adding machine tape, cardboard, colored paper, computer print out paper, envelopes without windows, fax paper, junk mail, magazines, manila folders and envelopes, newspapers, phone books, white paper

### **Problems/Solutions**

Staff from the city hauler was not as available to assist with the program as was originally planned. To address this issue and the additional workload related to other CRV recycling activities, the city hired a recycling assistant. The new recycling assistant did the majority of the work that was to be done by the hauler.

The Par Aide containers had a few drawbacks that had to be overcome. The original plan was to use stickers provided by the hauler to cover the "Cans Only" embossing on the top of the lid.

Unfortunately, neither the haulers stickers nor the Department of Conservation's stickers would stay on the lid. To overcome this problem, engraved plastic signs were riveted onto the lid.

One problem we had with the Windsor Barrels was the visibility of signage. Signage on the Windsor Barrels was only on the top. To increase the visibility of signage, side panels with the word, "Recycle" were installed on all Windsor Barrels.

### **Promotional/Educational Components**

Score cards, with the word, "recycling" added to the Rules of Play were printed and provided to golfers. To promote recycling, raffle tickets and cornstarch tees were distributed to players during two promotional events. Lone Tree Golf Course donated two rounds of golf, free cart rental and buckets of balls and the city contributed re-watches, polar fleece jackets, and a metal scrap sculpture of a golfer for the events. The Par Aid recycling containers were also highlighted during the events. The city attended the Lone Tree Golf Course board meeting and presented the board with certificates of appreciation and polar fleece jackets to three of the maintenance workers who were responsible for sorting out the recycling from the garbage. A press release was sent out to the Antioch Ledger, the Antioch Press and the Delta Gazette. The press release highlighted the success of the recycling program. The press release did not generate a story but was mentioned in two recycling articles in the Ledger Dispatch in March and April 2004 issues.

### **Implementation Schedule**

<b>Major Milestones Date</b>	<b>Projected Completion Date</b>	<b>Actual Completion</b>
Baseline waste characterization study	July 2002	June 17, 2002
Develop score card (promotion)	July 2002	July 10, 2002
Set up Par Aides and begin collection	August 2002	September 11, 2002
Set up Windsor Barrels and begin collection	September 2002	September 11, 2002
Conduct seasonal waste characterization study	September 2002	October 4, 2002
Conduct annual waste characterization study	April 2003	April 25, 2003
Conduct seasonal waste characterization study	July 2003	July 18, 2003
Conduct annual waste characterization study	May 2004	April 30, 2004

<b>Staff Hours</b>	<b>City</b>	<b>Lone Tree</b>	<b>Hauler</b>	<b>Total Hours</b>
Planning	3	1	1	5
Start-up	1	12	1	14
Operation	6	1,980	2	1,988
Evaluation	154	0	13	167
<b>Total Hours</b>	<b>164</b>	<b>1,993</b>	<b>17</b>	<b>2,174</b>

## Cost

### Budget

DOC Grant	\$11,923.00	(Lone Tree Golf Course staff time, bins and scale)
City of Antioch	6,604.46	(promotional items and labor)
City Hauler	8,078.30	(donated service and staff time)
Lone Tree Golf Course	16,808.52	(labor and donated raffle prizes)
<b>TOTAL EXPENSES</b>	<b><u>\$43,414.28</u></b>	

Infrastructure was the most costly portion of the program, comprising 85% of the total budget. This is due to the labor costs associated with servicing the recycling receptacles and data collection. Almost 50% of the total budget was comprised of Lone Tree Golf Course labor costs to maintain the recycling program. Administrative costs include City of Antioch and city hauler staff time. Equipment costs include the receptacles purchased and a scale for weighing recyclables and conducting the waste characterizations.

## Project Achievements

### Benefits/Accomplishments

The effect of the recycling program on the waste stream was apparent in the first seasonal study. In June 2002, prior to the recycling program, beverage containers comprised 19.51% of the sample compared to 9.24% in September. At the time of the final waste characterization study in April 2004, cardboard was eliminated from the waste stream and the amount of beverage containers in the garbage had decreased from 19.51% to 4.54%. The project successfully eliminated cardboard from the garbage and reduced the amount of beverage containers landfilled by the golf course by 75%. This project has the potential to divert approximately 28 tons of recyclables annually.

While the waste characterization studies are not required infrastructure for a recycling program, conducting the studies provided the staff with good feedback in regards to the success of the recycling efforts. By regularly evaluating the waste stream, we were able to address any program issues or shortcomings. Without the studies, we probably would not have discovered that the golf course generated more green waste than they could handle on site. As a result, we were able to set up green waste recycling service, which resulted in an annual diversion of an additional 10 tons from the waste stream.

### Keys to Success

- ∞ It is important to make sure that the site staff have program input and ownership in order to make it self sustaining
- ∞ Outreach must be fun and encouraging
- ∞ Monitor the program regularly to target outreach needs
- ∞ Be flexible and develop a program that can be modified with the seasons

## Total Tonnage

Material Type	Total Material Collected (TONS)
Total CRV Containers	20.86
Total Paper	0.97
Total Yard Waste	13.38
<b>Total Recyclables</b>	<b>35.22</b>

## Photos

### Concessions Cart



Figure A-1a: Exterior view of recycling bin

Figure A-1b: Interior view of recycling bin



## Windsor Barrels



Figure A-3: Windsor Barrel next to putting range



Figure A-4: Barrels and garbage receptacles at Patio/Snack Bar

Figure A-5: Lid graphics



Figure A-6: Temporary Barrel location



## Par Aides



Figure A-7: Single recycle bin



Figure A-8: ParAide with garbage and recycling receptacles



Figure A-9: Lid graphics